

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

E76 FW

LIBRARY OF THE
OFFICE OF EXPERIMENT STATION

JUL 25 1927

EXPERIMENT STATION



THE FOREST WORKER

JULY, 1926.

FOREST SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON D.C.



THE FOREST WORKER

July, 1926

Published bimonthly by the Forest Service,
U. S. Department of Agriculture, Washington, D. C.

CONTENTS

	<u>Page</u>
Announcements	3-6
State forestry departments and organizations	7-12
Education and extension	13-20
Forest Service notes.	21-32
General forest news	33-38
Foreign notes	39-46
Personals	47-50
Bibliography	51-54

ANNOUNCEMENTS

Foresters Offered \$500 Prize

A prize of \$500 given by Charles Lathrop Pack is offered by the Society of American Foresters for the paper presented during 1926 by a member of the society that is adjudged to make the largest contribution to the advancement of forestry. The judges will be Joseph Kittredge, jr., silviculturist, Lake States Forest Experiment Station; State Forester E. O. Siecke of Texas; and Aldo Leopold, associate director of the Forest Products Laboratory. The following conditions are announced:

"In judging the papers submitted the committee will consider the character, scope, and originality of the subject matter, the effectiveness of the presentation both to foresters and to nontechnical readers, and the value for the general object, namely the advance of forestry. Papers should not exceed 10,000 words in length and may include illustrations if necessary. The manuscript must be typewritten and submitted (in triplicate, if possible) to the chairman of the committee, Joseph Kittredge, jr., Lake States Forest Experiment Station, University Farm, St. Paul, Minn., on or before November 1, 1926. A manuscript should not be signed, but the author should write the title of his paper, his name, and address on a separate sheet which he should place in a sealed envelope labelled "Author's name" and inclosed with the manuscript.

"The competition is open to all associate members, members, senior members, and fellows of the Society of American Foresters in good standing.

"The society reserves the right to withhold the prize if in the judgment of the committee an award is not justified."

- - - - -

National Waste-Prevention Contest

A second waste-prevention contest is announced by the National Lumber Manufacturers' Association, to close on March 1, 1927. The scale of prizes is: First, \$1,000; second, \$500; next three, \$100 each; next four, \$50 each. The contest is open to all persons employed in or familiar with the manufacture of lumber and other sawmill products, either in woods operations, in transportation of forest products to the mill, or in saw and planing mill operations, and to persons in the employ of timberland owners. The entries invited are new devices or methods, applicable

to any sawmill operation between the stump and the finished product, that will prevent waste, utilize waste material, improve the quality of the product, or reduce costs. Contestants are asked not to submit devices or methods designed for use in fields other than logging and milling, such as furniture and implement manufacture or millwork; nor to point out what are believed to be sources of waste without suggesting practical means of preventing such waste or profitable methods of utilizing the waste material; nor to send in "essays" on waste or ideas that have not been developed far enough to show whether they can be put to practical use.

No method of presentation is prescribed, but a clear description should be furnished of the character, purpose, operation, and application of the device or method. If circumstances warrant, drawings or photographs should be submitted. Written opinions of competent loggers or lumber manufacturers as to the merits of or claims made for the entry, or the accredited results of trial or use of the entries, will be helpful to the judges.

No property rights will be claimed by the association in entries filed, which may be patented by the entrants either before or after submission in the contest. The association however reserves full right to give such publicity to the details of the entry as the circumstances warrant.

Awards will be based on the practical judgment of competent lumbermen in the regions to which the entries are applicable, supported by the opinion of experts in the special fields involved. The award committee reserves the right to withhold prizes if in its opinion awards are not justified by the character of the entries.

This year the national contest will be supplemented by several regional contests, the conditions of which will be announced later by the regional associations of lumber manufacturers. Any entry in a regional contest may be filed also in the national contest, and the best 10 entries in each regional contest will automatically be included in the national contests.

Inquiries in regard to the national contest should be addressed to the National Lumber Manufacturers' Association, 402 Transportation Building, Washington, D. C.

A position as district forester is open in Kentucky. The man to be appointed will take charge of forest fire control in a definite section of the State. His salary will be something like \$2,100.

Two New Forestry Films

"The goose that laid the golden eggs" figures in a 2-reel forestry film just released by the Department of Agriculture. The futile sacrifice of the fabulous bird is paralleled with that of forests under a wasteful system of logging. Then the system used in harvesting mature timber on the national forests is shown step by step, from the advertising of a unit for sale to the supervision of slash burning, with emphasis on the methods of providing for perpetual yield. The picture was photographed in the Harney National Forest and shows to advantage the characteristic scenic beauty of the Black Hills.

A companion film also taken in the Black Hills has as its subject "Marking Timber." It follows a ranger as he goes through a timber-sale area with his marking ax, and shows in detail the conditions that guide his choice of trees for cutting. This film is intended primarily for forestry students, but will be of interest to all forest conservationists.

Copies of these films may be borrowed for short periods, or may be purchased at the laboratory charge. Requests should be addressed to the U. S. Forest Service, Washington, D. C.

- - - - -

Outline Lecture on Range Management

A lantern-slide lecture on range management on the national forests prepared and revised by W. R. Chapline, grazing inspector, U. S. Forest Service, is now available for distribution. Requests should be addressed to the Office of Cooperative Extension, U. S. Department of Agriculture.

- - - - -

Prizes for Photographs

An outdoor photograph contest is being conducted by American Forests and Forest Life. Prizes of \$25, \$15, and \$10 are offered for the three best photographs suitable for use as cover pages of the magazine, and prizes of \$10, \$5, and a 15-months subscription to the magazine are offered for the three best photographs of freaks and curiosities of nature and queer forms of tree growth. Entries should be addressed to the Photo Contest Editor, American Forests and Forest Life, 1523 L Street, N.W., Washington, D. C. The contest closes September 1.

- - - - -

The fifth International Conference of Soil Science will be held at Washington, D. C., during June, 1927. This will be the first such conference ever held in the United States. The Secretary of State will invite foreign nations to send delegates. The program of the conference will center on problems connected with the founding of a useful soil science, including the problem of correlating and classifying the soils of the world.

STATE FORESTRY DEPARTMENTS AND ORGANIZATIONS

More States and More Money for Clarke-McNary Cooperation

Twelve States that never before distributed forest planting stock to farmers are undertaking such work in the year beginning July 1, 1926, with the cooperation of the Federal Government. This year's Federal appropriation for tree distribution under the Clarke-McNary Law is \$75,000, which is one-third more than that of the fiscal year 1926; so that the large increase in the number of cooperating States, which now stands at 31 (including Porto Rico), will not compel a reduction in the amount allotted to each for this purpose. This year, for the first time, the Forest Service will assist some of the States by furnishing them with tree seeds of species needed by the State forest nurseries and hard to obtain. Forest Service agencies in the Lake States are collecting red pine seed, in the hope of meeting requests from 12 States for a total of 1,400 pounds.

The funds made available by Congress for cooperation in forest fire protection during the fiscal year 1927 have been increased so that in that activity, likewise, the individual allotments to States will be maintained at their former level. Allotments for this purpose will go to 33 States, the latest to get on the list being Mississippi, and will total \$607,670.

- - - - -

Yield Tax for Planted Forests in New York

Planted forests in New York State will be free from taxation until they are cut, under the terms of the new law known before passage as the Fisher Bill. Without changing the present taxation status of any lands, the new law provides that areas of 5 acres or more on which forest trees have been planted since January 1, 1921, if not within specified distances of cities and villages and if planted at a rate of not less than 800 trees per acre in the open or underplanted at a rate of not less than 300 trees per acre, will be assessed on the same basis as if unplanted. When the timber is cut, a tax of 6 per cent of its stumpage value will be collected.

The law took effect immediately.

- - - - -

The Kentucky Forest Service, in order to learn what tree species it should raise and distribute for reforestation purposes, plans this summer to inspect and measure every plantation in the State.

Record-Breaking Output from New York State Nurseries

The State forest nurseries of New York this spring sent out more than 17,000,000 young trees. This immense production doubles that of any preceding spring and exceeds that of the whole 12-year period 1901-1912. Fall distribution, Superintendent of State Forests Clifford R. Pettis says, will bring the 1926 total to about 23,000,000.

Each season the New York Conservation Commission fills all orders for planting stock to be used in the production of lumber and wood before it uses any on the State's protection forests, from which the State constitution prohibits the cutting of timber. For several years past the demand for planting stock for production forests has almost or entirely exhausted the output of the nurseries. This spring, however, 3,000,000 trees were left for planting on the State lands in the forest preserve. Sixty two-man planting crews, under the direction of foresters Amadon, King, and Davis, were put to work on a single area, a 2,000-acre tract in Essex County on the headwaters of the Boreas River. This tract, originally a spruce forest, was heavily cut and then burned, and has lain waste since 1903. The planting of 2,000,000 Norway spruce seedlings on this land--at the rate of 100,000 a day--constitutes the largest single forest planting project ever undertaken by the State. The conservation commission hopes to plant another 3,000,000 trees on land in the forest preserve this fall.

- - - - -

Planting Trees from State Nurseries of Pennsylvania

Mining companies of Pennsylvania this spring planted more than 1,565,000 forest trees supplied by the State. Orders were filled for 37 different companies, of which 7 received the maximum allowance of 100,000 trees. The species ordered in largest numbers by the mining companies were pitch pine, Scotch pine, white pine, and larch, all of which produce mine timbers, ties, and props in from 25 to 40 years. Altogether the mining companies of Pennsylvania have planted 8,382,000 trees from the State nurseries.

Increasing interest in forest planting among Pennsylvania associations and clubs is shown by this season's distribution from the State nurseries. Hunting and fishing clubs were prominent on the lists, and Boy Scouts and country clubs asked for much larger numbers of trees than ever before. The largest number set out by a single club was the 40,000 of the Crystal Springs Rod and Gun Club of Clearfield. Scranton Boy Scouts took second place by planting 32,000. Third on the list was the Kiwanis Club of Lancaster, which had charge of the planting of 28,000 trees on the city's watershed.

- - - - -

Changes Proposed in Tax on Oregon's Denuded Land

The people of Oregon have now had placed before them for study and criticism a bill prepared by the State's reforestation commission to modify the method of taxing denuded forest lands. According to the act of the 1925 legislature directing the preparation of this bill, the commission will later hold public hearings at which citizens may appear to state their criticisms or suggestions. The bill in its final form is to be filed with the governor by November 1 of this year.

The proposed bill is largely a compilation of features of laws passed or proposed in other States, especially the Michigan law of 1925. Under its provisions the State board of forestry would have power to determine what lands within the State should be classified as reforestation lands. Lists of such lands would be sent out through the State tax commission and the county assessors, and public hearings would be held for arguments for and against the board's classifications. After these hearings the board would make a final determination of valuation which would become binding upon the county assessors.

Land thus classified as reforestation land would be subject to an annual specific tax of 5 cents an acre, and its forest crops would be taxed when harvested at the rate of $12\frac{1}{2}$ per cent of their value. The owner would be required before harvesting any of its forest crops to apply to the State board of forestry for a permit. If refused, he might appeal to the courts. Permits would set forth the value of the various forest products to be harvested. An owner failing to remit the yield tax by the following January 15 or July 15 would incur the penalty of an additional $12\frac{1}{2}$ per cent tax.

An owner of reforestation land would have the privilege of entering into a long-time contract with the State which would assure him that the tax rate would remain uniform throughout the rotation period.

- - - - -

Rhode Island Organizes a Forestry Association

An American Forest Week meeting in Rhode Island, in which about fifty persons were brought together to hear a talk by Harris A. Reynolds of Massachusetts, resulted in the formation of the Rhode Island Forestry Association. The following officers were elected: Howard L. Hitchcock, Richmond, president; T. Pierpont Hazard, Peace Dale, vice president; E. K. Thomas, Providence, secretary. An executive committee of eight were elected.

- - - - -

The Conservation Commission of Wisconsin recently received an emergency appropriation of \$40,000 for organizing and equipping new forest fire protection districts.

Forestry Reorganization in Virginia

The Forestry Department of Virginia has apportioned the State into four forest districts and placed a district forester in charge of its activities in each. The line-up is as follows: District 1, embracing practically all of the tidewater section, district forester W. L. Gooch, headquarters Ashland; District 2, including a large part of the piedmont plateau region, district forester J. P. Andrews, headquarters University of Virginia; District 3, taking in a large number of the northwestern mountain counties, district forester W. H. Stoneburner, headquarters University of Virginia; and District 4, the southwestern unit, district forester S. G. Hobart, headquarters Abingdon. Mr. Andrews has been with the department for more than 10 years; Mr. Stoneburner was formerly supervisor of the Unaka National Forest; Mr. Gooch until recently acted as forester to the Elk River Coal and Lumber Co.; and Mr. Hobart has for several years been employed by the Gauley Coal Land Co. of West Virginia.

On June 15 the Geological Commission of Virginia, which formerly controlled the State's forestry activities, was replaced by the Virginia Commission on Conservation and Development.

- - - - -

Tree Planting Activity in North Dakota

The first trees from the reestablished North Dakota State forest nursery, at Bottineau, are to be planted in the form of 40 demonstration shelter belts. Extension Forester Gillett will visit the chosen sites this summer, to determine how many trees are needed at each and to make sure of proper preparation. In the demonstration work he will have the cooperation of county agents.

The Bottineau nursery is arranging to test out forest tree ^{species} ~~varieties~~ for their adaptability to North Dakota conditions. Tree seeds have been brought from the Arnold Arboretum, the Brooklyn Botanical Gardens, and the Kyushu Imperial University of Japan.

As an outgrowth of American Forest Week the Association of Commerce at Minot, in western North Dakota, is sponsoring a farmers' tree-planting campaign. Its plans were drawn up with the assistance of State Forester Cobb, and the planting stock is being brought from the State nursery, the North Great Plains Field Station of the Department of Agriculture, at Mandan, and commercial nurseries.

- - - - -

The first State nursery of Alabama is being established on a 40-acre tract anonymously presented by a citizen of the State. It is located in Sumter County, in the western part of the State.

- - - - -

New Forest Tax and Fire Laws in Kentucky

A new Kentucky law provides that privately owned tracts may be listed as State forest and game preserves, with a fixed maximum valuation for taxation purposes of \$2.50 an acre and with a 10 per cent commodity or yield tax to be paid at the time of cutting. The State forestry department is to direct the management of property so listed, the owner working with the department in carrying out its plan. If the owner infringes on the plan of management, he can be charged the difference between taxes at the old and at the new valuation for the whole period during which his land has been under management as a forest and game preserve. The yearly taxes will go into the State forestry fund, and the yield tax will be divided equally between the State and the county. Senator Bond, the author of the bill, hopes that these preserves will meet the State's needs so far as State forests are concerned. The senator himself is turning over 20,000 acres of land to State control under these provisions.

Another law recently enacted by the Kentucky Legislature authorizes forest wardens to summon fire fighters and equipment, to trespass on private land in line of duty, and to make arrests without warrants for violation of forestry laws. It also provides that wardens may administer oaths to witnesses in investigations of fire causes and to persons claiming compensation, and that persons summoned to fight fire need not be paid.

- - - - -

Proposed constitutional amendments to permit legislation for the purpose of encouraging and promoting forestation and reforestation, including special tax legislation, will be voted on in the general elections of November in the States of Washington and Minnesota, as well as in California. A resolution for a similar amendment has been adopted by the Legislature of Wisconsin and is referred to the next legislature of that State for confirmation.

- - - - -

Louisiana timberland owners this season volunteered to supply the funds for employing 50 men for forest fire patrol. The patrol force paid by the State numbers 100. State Forester Hinc estimated that the 50 per cent increase in the number of paid patrolmen would cut timber losses in the State this year by \$500,000.

The Brown Paper Co., operating a pulp and paper mill at Monroe, this spring bought two fire towers for the protection of 200,000 acres of timberland in northern Louisiana. The Industrial Lumber Co. of Elizabeth at the same time bought one for the protection of forests in Caldwell, Jackson, and Allen Parishes.

Texas Forestry Department Gets a Promotion

The Texas State Forestry Department has been recognized by the Board of Directors of the Texas A. and M. College as one of the four major divisions of the college. It now has the same official rank as the extension service and experiment station divisions, and State Forester Siecke as its head has the title of "director."

The work of the Texas forestry department, established in 1915, is now carried on by a staff of 5 technical and 44 nontechnical employees. About 95 per cent of it is educational. Mr. Siecke sees a large field for forestry development in the State, which has a lumber industry exceeded by that of only 6 others.

- - - - -

Governor of West Virginia at a Planting Bee

Governor Gore of West Virginia lent a hand in the forest planting which on April 30 opened the State's new reforestation program. On a farm near Huntingdon owned by W. L. Wilson, members of the Huntingdon Lumber and Supply Club, local farmers and Boy Scouts, and Four-H club boys and girls of Wayne and Cabell Counties met with the Governor for a full day's planting. The 3,500 saplings of Norway, Scotch, and red pine used had been brought from the State Nursery of New Hampshire. Governor Gore and Mayor Neal of Huntingdon addressed the crowd on the importance of reforestation.

- - - - -

New York State farm land abandoned in the last 25 years amounts to 3,377,000 acres, says Superintendent of State Forests Clifford R. Pettis. This is an area considerably larger than the entire State of Connecticut. During recent years this abandonment has progressed at a quickened pace, 4,411 farms containing 1,362,544 acres having been abandoned within the last five years.

- - - - -

Schuyler County, N. Y., has set a record for promptness in carrying through arrangements to establish a county forest. On March 9 a committee of the board of supervisors was appointed to act on recommendations received from the forestry department of the New York State College of Agriculture. The committee immediately went to work to locate a piece of land suitable for a county forest, and soon found 50 acres of cleared land in the town of Orange very suitable for the purpose and so reasonably priced that the county did not hesitate to buy. Earlier plantings in Orange showed that the native white pine was the species best adapted to planting there. An order for 10,000 white pines was placed with the conservation commission by the county on May 4--less than two months after the committee was appointed.

EDUCATION AND EXTENSION

Forestry Has a Field Day

By W. R. Mattoon, U. S. Forest Service

Twenty years' working of a Forest Service planting plan!

Three hundred and fifty farm people out to see the young planted forests and hear talks about putting loafing acres to work! That is what State and Federal foresters saw on June 22 at the Great Bear Farm near Fulton, Oswego County, N. Y. The demonstration was the result of the united activity of the State forestry organizations.

On the Great Bear Farm there are many acres of white pine, red pine, Scotch pine, European larch, and native tamarack of many ages and in many different mixtures and spacings. Altogether some 400,000 conifer seedlings have been planted on some 300 acres of old farm land since 1906. And the work is still being carried on by the man who began it, F. A. Emerick of Oswego, the owner of the farm.

Back in 1906 Mr. Emerick got the idea of protecting the lands about his Great Bear Springs--of practically national reputation--by forest planting. Where should he go for advice? The New York State Conservation Commission was not then functioning to any considerable degree in forestry extension; so he appealed to the Forest Service at Washington. As a result Allen S. Peck, then a forest assistant and now district forester at Denver, Colo., went to Fulton and after a study of local conditions drew up a planting plan. Mr. Emerick adopted the plan and has since used it as a guide for extensive plantings. Some revisions have been made by the State conservation commission.

The conditions then and now, both as to a source of planting stock and as to opportunity for getting advice on forest planting, make a strong contrast. At that time small trees could be procured only from commercial nurseries. The people of the State can now count upon the assistance of the conservation commission at Albany, which is ready with sturdy little trees at \$2 and up per thousand, excellent publications, and personal advice, and of the New York State College of Forestry at Syracuse and the New York State College of Agriculture at Cornell, both with extension departments offering free services.

The visitors at the field meeting were shown a dozen different plantings, by guides well prepared with a good line of information. Signs, printed on wall board and attached to planted trees along the roadways and at the openings used by the inspection parties, indicated

the species and age of the trees and the spacing used, or carried slogans such as the following:

PLANT TREES and Provide an Education for your Children or an Income When They are Grown.

TIMBER--The One Crop that will grow where others fail and One Crop for which there will be always a constant demand.

38 People Planted 233,000 Trees in Oswego County in 1926.

126 People Have Planted 1,764,050 Trees in Oswego County Since 1909.

Following the inspection of the trees and a basket dinner at noon, the people sang under the direction of a trained leader and listened to talks by the owner of the farm, F. A. Emerick; C. A. Taylor of the Extension Service, College of Agriculture; W. R. Mattoon, representing the Forest Service of the U. S. Department of Agriculture; Hon. John D. Clarke, Congressman of the 34th New York District and coauthor of the Clarke-McNary Law; C. R. Pettis, Superintendent of State Forests; Paul D. Kelleter, Director of Forestry Extension, State College of Forestry at Syracuse University; and S. L. Strivings, Master of the State Grange.

The plantations furnish a veritable mine of information. Red, or Norway, pine and European larch are outstanding successes. The red pine is straight, vigorous in growth, and without damage by insect or disease. Its branches are pruning off much better than those of the other pines. The European larch is a blue-ribbon prize winner. It has outgrown all other conifers, in about 15 years reaching heights of 30 to 40 feet and diameters of 6 to 9 inches. The branches are slender and are readily pruned by snow and sleet. Perhaps best of all, the wood lasts well in the ground and is regarded as a great friend of the farmer in furnishing fence posts of good durability. The European larch is decidedly a dry-land tree. Unlike our native swamp tamarack, or larch, it is at home on average well-drained uplands. A few of the native tamarack may be seen in the plantations, ranking smaller than their European cousins.

The New York Conservation Commission unreservedly recommends the planting of larches in the fall. Both species are deciduous and begin very early in the spring to swell their buds. Fall planting is advised in order to avoid digging up the little trees with pickaxes in the frozen ground of the seed beds. Fall planting is also advised by Superintendent Pettis for pines in sheltered locations where the planted trees will not be exposed by winds sweeping off the protective layer of snow. This practice very advantageously extends the period of planting by about two months in the fall.

Fire-Prevention Evangelist Rides the Circuit

Thousands of children in Oregon within the past few months have told their parents about an unexpected visitor at the schoolhouse who showed them motion pictures of forests and forest fires. The Oregon Forest Fire Association, the Oregon State Board of Forestry, and the U. S. Forest Service have joined in a fire-prevention campaign that is something new to the West. The association had a motion picture film specially prepared in the western forests showing logging, natural reforestation, recreation, and fires. Equipped with this film, a projector, and Forest Service slides and balopticon, a lecturer has been driving through the country and knocking at the door of every schoolhouse. He arrives unannounced, but is never refused permission to put on his illustrated lecture. Preparation is made in advance for evening entertainments in high-school auditoriums, churches, and city halls, to which the general public is invited. The tour began the first of the year, and at the end of May had reached 30,000 people, of whom more than three-fourths were children. The plan was to concentrate on the schools until they closed in June. During the summer the granges, service clubs, and similar organizations will have their turn. At the height of the tourist season a number of programs will be put on at auto camps.

The lecturer is the Hon. W. V. Fuller, former cruiser, logger, fire warden, and member of the Oregon State Legislature. During the early part of the campaign he was accompanied by George E. Griffith, of the Portland office of the Forest Service.

- - - - -

One Truck Fire-Prevention Show on Southern Forests

Ranger Garner B. Anchors of the U. S. Forest Service has just finished an 8-month tour of the Alabama, Cherokee, Florida, Nantahala, and Unaka Forests in his truck outfitted with motion-picture apparatus and films and with other exhibit material. During that time he has driven over 7,133 miles of mountain roads and has given his forest fire-prevention "show" before 27,127 people living in or close to the national forests of the Southern Appalachians. The show was given 149 times, with an average attendance of 182. Counting in every expense of the tour, including the cost and maintenance of the truck and equipment and the ranger's salary and subsistence, the Forest Service figures that it has sent a vivid fire-prevention message to these national forest inhabitants and neighbors at a per capita expense of 17 cents. It is expected that the cost of continuing this work on a permanent basis will not exceed 10 cents per capita and may be somewhat less.

This project is one of two now in service in the Eastern National Forest District, the other working in Arkansas.

- - - - -

More Forestry at Michigan State College

Forestry work at the Michigan State College has been considerably increased in scope during the past year, Professor A. K. Chittenden reports in the M. S. C. Record. The college now has financial assistance from the Federal Government in the raising of forest trees for distribution to farmers, as well as in forestry extension work. In addition the Port Huron Sulphite and Paper Co., in order to encourage the production of pulpwood on Michigan farms, is giving it as much as \$500 a year for the purchase of white spruce seed from which to raise trees for distribution to farmers. The college nursery can not meet the increased demand, and a new nursery is being established at the Dunbar Experiment Station.

This experiment station of 577 acres, given to the college last year, has been placed under forest management and is being used as a summer forestry camp. Fire lines have been constructed, and with the cooperation of the Michigan Department of Conservation the college is raising a 60-foot steel lookout tower. This area includes about 450 acres of forest, largely spruce and balsam--some of which is now large enough for pulpwood. Located on the St. Mary's River, 16 miles south of the Sault Ste. Marie, it is ideally situated as to lumber and pulpwood markets.

A study by the college of second-growth hardwood stands has led to the publication of one of the few yield tables available for this type of forest. It was found that second-growth hardwoods, unthinned, grow at the rate of about three-quarters of a standard cord an acre a year, and that they will produce saw logs in about 75 years.

Professor Herbert has completed a study of forest insurance with special reference to Michigan conditions, and Mr. Dressel has completed one on the results of the Michigan law which grants partial exemption from taxation to farm woodlots and plantations.

- - - - -

Forest planting demonstrations were held in 16 counties of Wisconsin during the month of May, with planting stock supplied free by the State nursery. In one county the cooperators numbered 200.

- - - - -

On "Farmers' Day" at the University of Maryland, May 29, 9,000 visitors viewed exhibits prepared by Extension Forester F. B. Trenk showing how certain farm woods are used, what trees are best for planting in Maryland, and how fast loblolly pine grows in that State. A transparency was used to show the damage caused by forest fire, and a model of a wooded mountain section illustrated camping, timber cutting, mill operation, tree planting, and fire detection.

Forestry for Citizen Soldiers

More than 15,000 citizen soldiers will get a taste of forestry at Camps Knox, Meade, Humphreys, and Eustis this summer. National guardsmen and members of the C. H. T. C. and R. O. T. C. will find lectures on forestry by Forest Service officers on their program as part of the citizenship training given at these camps. In most cases the lectures will be sweetened with lantern slides and motion pictures. Specially prepared forestry literature will be distributed and will be placed in the camp reading rooms, so that the boys can read up on the art of forestry as a sideline to their study of the art of war.

To those conversant with the history of baseball, there is more in this than meets the eye. Before the Civil War the modern game of baseball was played by only a few. But the soldiers learned the game in the Civil War training camps, and when they were mustered out and returned to their homes all over the country they took the game with them and made it the national sport. There is the hope that the citizen soldiers from Ohio, Kentucky, Indiana, Maryland, and other States this summer will carry forestry back home with them and help to make it a national art and practice.

- - - - -

Michigan Fire-Prevention Train

The preliminary score of the Michigan fire-prevention train, which made its run in February and March, 1926, is reported by Supervisor R. G. Schreck of the Michigan National Forest as 93 stops made and 60,000 people reached. The Upper Peninsula got the lion's share of attention, 63 stops being made there and 39,000 people being reached. What the final score in reduced fire damage will be no one can tell; but judging by Supervisor Schreck's impression it should be a good one. "It was not realized," says his report, "what results would be secured from this train until it was well under way, and it was certainly an inspiration to see the great numbers of people that turned out at each town to see the exhibits and hear the lectures."

The train had three coaches: an exhibit coach with displays on forests, forest fires, planting, logging, and land clearing; a lecture car seating 90 people, equipped to show motion pictures, and "decorated" with fire signs from Canada and from every State in the Union practicing fire prevention; and a coach for living quarters.

Four railroads, two development bureaus, the Michigan State College and Conservation Department, and the U. S. Forest Service cooperated in the enterprise.

The plan of handling the crowds was the circus method, menagerie first; and performance afterward. They were first sent through the exhibit car, then handed a prize package of publications prepared by the U. S. Forest Service and the Michigan Conservation Department, and finally directed into the lecture car. In some places a motion-picture theatre was placed at the disposal of the fire-prevention evangelists, which enabled them to handle larger crowds. A special point was made of reaching the school children, speakers being distributed to all schools along the route. Business men's clubs, chambers of commerce, and women's organizations showed their usual hospitality to the speakers carried on the expedition.

Deep snow and cold weather were encountered at times; sometimes the trainmen furnished by the railroads laid aside their professional duties and took a hand at passing out publications or helped in other ways; it was a job requiring willingness and cooperation all around--but "the people of northern Michigan were interested" and they came to see and hear and help.

- - - - -

Forestry at the Women's Clubs Convention

The largest space devoted to any one exhibit at the eighteenth biennial convention of the General Federation of Women's Clubs at Atlantic City, May 24-June 5, was that devoted to forestry. The exhibit, consisting of panels, bromide enlargements, forest-fire and fire-tower models, and a camping scene, was furnished by the U. S. Forest Service.

The only motion-picture showing during the whole convention was of a film entitled "What the Forest Means to You," also furnished by the U. S. Forest Service. This film was shown at a special "conservation conference," held June 2 in the little theatre on the steel pier and attended by about 350 delegates. The film was accompanied by an explanatory address by Mrs. L. T. Conway of the Forest Service. In connection with the exhibit and the showing of the film, forestry publications were distributed to a considerable proportion of the 8,000 delegates attending the convention.

- - - - -

A circular on "Opportunities in Forestry" has been published by the Redwood Association of California in an effort to interest high-school boys of that State in forestry as a profession. It briefly sketches the lines of work open to men trained in forestry and outlines the forestry course offered by the University of California and the usual requirements for admission to a school of forestry. The pamphlet contains many interesting illustrations and has a foreword by Will C. Wood, superintendent of public instruction of California.

Four-H Clubs of New Hampshire Take Up Forestry

Two years ago E. B. Fletcher, extension forester in New Hampshire, tried the experiment of organizing a forestry club of boys. During that first season 41 boys "joined up" for forest planting, and 7 for the study of woodlot improvement. How interesting New Hampshire children found this sort of work is shown by the fact that this year the 4-H forestry clubs of the State have an enrollment of 500 boys and girls and their spring planting program called for setting out 50,000 pine seedlings.

Young foresters of these clubs have competed for honors in a contest financed by the Society for the Protection of New Hampshire Forests. The highest award went to Dane Ireland of Dunbarton, who had cut out gray birch on an acre of land. The white pine released by his cutting grew four to six times as fast as that left under cover of the birch, and he found that one young pine tree in the year following its release grew $43\frac{1}{2}$ inches in height. Other contestants had to their credit ambitious projects of improvement cutting and of forest planting. Most of the planting was done on worn-out pastures which were lying idle or growing up to bushes and inferior trees. Melville Hodgdon of Dover had pruned the dead limbs on the pine trees in close stands to a height of 16 feet, operating from a ladder.

Idaho Forestry Students at the Northern Rocky Mountain Station

The forestry school of the University of Idaho and the Northern Rocky Mountain Experiment Station cooperated in May in a plan to combine practical experience for the students with advancement of some of the station's studies.

Dean Miller and 11 students spent two weeks at the station. Four $1/8$ -acre permanent yield plots in white pine and Douglas fir stands and two somewhat larger thinning plots were established. The students spent $2\frac{1}{2}$ days in marking, felling, and slash disposal on the thinning plots. A study of reproduction and seed trees following cutting was made on one of the regular cut-over areas listed for study by the station. A day's work resulted in three lines across the area, 90 quadrats, and increment borings from 75 trees. The program also included a study of reproduction following fire, fire studies, and marking, slash disposal, and inspection on a timber sale area on the Kaniksu National Forest. In this timber-sale work the students were given marking axes and organized into small crews under the supervision of experts from the timber-sales personnel of the Kaniksu. The students were individually instructed in the use of meteorological instruments, especially the sling psychrometer; determination of fuel moisture content by oven drying and duff hygrometer; plotting daily records of relative humidity, temperature, precipitation, and duff moisture; and interpretation of weather forecasts in the light of forest fire conditions.

Ambitious Forestry Program of North Carolina Farmers

Twenty county boards of agriculture were formed during the past winter by farmers of western North Carolina. Each board includes two farmers from each township of the county. Each has worked out a cooperative plan of action between the farmers and the county agricultural agent, and meets with the agent periodically. On December 17 a sectional meeting at Asheville was attended by representatives of 14 counties, all the county agents, and several specialists from the State College of Agriculture. At this meeting the organization gave itself the name "Carolina Highlands Agricultural Association," and committees worked out programs for effort in each of the various fields of agriculture to meet "the needs of a more profitable agriculture throughout the entire mountain region." The forestry program prepared by a committee composed of three county agents and accepted by the association is as follows:

"1. Object: To secure a profitable crop on every acre of land in the mountains capable of growing timber or other forest products and not needed for agriculture. To provide for the orderly marketing of these forest crops.

"2. Procedure: Survey by counties of forest area of farms. (Statistics now show 64.6 per cent of farm area is forested. Expressed in terms of acres this is 2,412,870 acres in the 20 counties embracing western North Carolina. Most of this, however, is cut-over land now open to reforestation or other development.)

"3. Recommendations: Working plans for each farm should be formulated. This plan to include fire protection, a system of cutting to secure renewal, determination of adapted species to be encouraged for new crop, and methods of stocking the burned and devastated areas.

"4. Procedure: Cooperation should be secured between the different counties, the fire warden, the State forester, the extension forester, and the U. S. Forest Service in the development of forestry."

- - - - -

FOREST SERVICE NOTES

Federal Legislation

The Second Deficiency Appropriation Bill as finally passed by Congress provides \$100,000 for fire-protection improvements on the national forests in southern California. This money is being added to the permanent improvement fund of the Forest Service and will be used in installing and maintaining firebreaks.

Legislation completed during the closing days of the session included Senate Bill 3405, authorizing an appropriation of \$30,000 for the establishment and maintenance of a forest experiment station in the Ohio-Mississippi Valley, and Senate Bill 2516, authorizing an appropriation of the same amount for a forest experiment station in the Middle Atlantic States. The States affected by the provisions of the latter bill are Pennsylvania, New Jersey, Delaware, and Maryland. The bills for forest experiment stations in Porto Rico, at Colfax, La., and at the "Old Stockade," in Georgia, failed to get out of committee. Two new forest experiment station bills were introduced late in the session and are still in committee: Senate Bill 4212, introduced by Senator Fletcher, which would provide for an appropriation of \$50,000 to be used by the Southern Forest Experiment Station upon naval stores investigations in cooperation with the Forest Products Laboratory; and House Bill 12235, introduced by Representative Johnson of Washington, which would provide for the appropriation of \$50,000 to be used by the Northern Rocky Mountain Forest Experiment Station in studying methods of producing and protecting the western white pine.

Two exchange bills relating to New Mexico were enacted. One authorizes the State to exchange its school lands within the national forests for publicly owned lands outside; the other will permit the owners of the Mora Grant to exchange timbered portions of their land for national forest land or timber in the States of New Mexico and Arizona. A bill was passed which prevents the establishment of new national forests in Arizona and New Mexico, or additions to existing ones, except by the consent of Congress. An act to revise the boundaries of the Sequoia National Park will take from the Sequoia National Forest approximately 250,000 acres.

Senator McNary's bill (S. 718) to authorize greater appropriations under the Weeks Act was indefinitely postponed in the Senate. No grazing bill was passed. The bill for a national arboretum failed of enactment, but may be further considered at the next session. Senate Bill 4007, known as the "Three Point Bill," designed to avoid the application of certain rulings of the Comptroller General relating to fiscal matters, passed the Senate but was not reported by the House Agricultural Committee.

Alaska Cedar Matures Seed in Two Years
By George B. Sudworth, U. S. Forest Service

In both the oldest and the newest books on conifers Alaska Cedar (*Chamaecyparis nootkatensis*) is spoken of as an annual fruiting species; but according to facts discovered some thirteen years ago by several members of the Forest Service this cedar requires two full seasons to mature its seeds. I made this statement in the Review of Forest Investigations (Vol. II, p. 7). This Forest Service publication, laid to rest in 1913, has now probably gone from the memory of the younger foresters. Be that as it may, the lack of knowledge as to the length of time required by the Alaska Cedar to mature its fruit apparently has caused not a little trouble to forest officers of the North Pacific District in their efforts to obtain ripe seed.

I feel considerable responsibility for the apparent absence now of this knowledge among members of the Forest Service, because my Forest Trees of the Pacific Slope (published in 1908), which is often used as a reference book, says that the cones of Alaska Cedar mature in one season. It is not especially comforting now to know that in 1908 other writers also did not know the facts, nor is it any more comforting to learn that very recent writers on conifers are ignorant of the seeding habits of this cedar. It is really mortifying that the life history of the Alaska Cedar, a species known to science for more than 100 years, should still be so little understood. The lapse suggests how easy it is to accept without question statements that seem to be well attested.

Even now, when the cycle of seed development is known, the practical difficulty of finding mature fruit of the Alaska Cedar may not be greatly lessened. A collector hunting for seeding trees may find individuals bearing a crop of cones all of which appear to be full sized but which are in fact partly of one and partly of another season's growth. The inexperienced collector can no more than guess at the age of these cones. With experience he will learn that only when the (still green) cones show more or less bulging along the borders of the cone scales (sometimes accompanied by the protrusion of yellowish-brown seeds) are they ready to gather. Cones of the first season, though they may be of practically the same size, do not show the fullness nor the brownish seeds present in second-year cones. Moreover, toward the end of the second year the ripening cones show more and more brownish areas on the scales, which are unmistakable signs of maturity.

- - - - -

The name of the Arkansas National Forest has officially been changed to Ouachita (pronounced Wesn-i-taw, with equal stress on each syllable). Ouachita is the name of the mountains which the forest occupies and of the river by which it is drained.

Experimental Planting at the Appalachian Station

This spring's planting by the Appalachian Forest Experiment Station added 13 experimental plots to the 34 established in previous years in the spruce type burn on the Mount Mitchell Motor Road in the Black Mountains. Most of these are chain-square plots containing 100 seedlings or transplants each. The species put out for test this year were northern white cedar, Japanese larch, lodgepole pine, red pine, and "pedigreed" Scotch pine, contributed by the New York State College of Forestry, the Ohio Forest Service, and the Michigan National Forest. Other contributions received included transplants or seedlings of white fir from the Monument Nursery (Pike National Forest, Colo.), of sugar maple and arborvitae from the Cornell Forest School nursery, and of red pine from the Vermont State forester and the Pennsylvania Department of Forests and Waters; but these arrived too late for the Mount Mitchell planting, and were set out until next year in nursery rows at Bent Creek, along with the surplus from the Mount Mitchell work.

Through the cooperation of the North Carolina State forester's office four experimental plots were set out this year in the State park on the crest of the Black Mountains. Three of these were planted by Assistant State Forester Claridge and State Fire Warden Simmons. Lodgepole and Norway pine, Japanese larch, and northern white cedar are thus being tested at high altitudes and under different conditions from those prevailing in the other experimental blocks.

Thirty-two plants of a Chinese chestnut, Castanea mollissima, obtained for the station by George B. Sudworth from the Office of Seed and Plant Introduction were set out at three points in the Bent Creek investigative area. The planting of Castanopsis delavayii, which was made last fall, has failed completely. Every one of the seedlings died, including many that had been heavily mulched under boxes. The bark was found to have split lengthwise of the stem and to have become separated from the wood.

Plantation of Foreign Chestnut

A plantation of foreign chestnut that is probably the largest in the United States has been established at the Meade National Forest, created recently from the Camp Meade Military Reservation. A total of 11,700 trees were planted. More Castanea Japonica were planted than any other single species. Most of the trees, however, are hybrids. The work was done under the supervision of G. F. Gravatt, acting pathologist of the Bureau of Plant Industry, and L. S. Gross, the acting forest supervisor. Planting stock 1 year old was used, spaced 6 x 6 feet. Shallow furrows were plowed and the seedlings set in mattock holes in the furrows. It is hoped that these trees will show great blight resistance, and that in place of broom sedge the area will produce a good stand of chestnut.

National Forest Grazing Figures for 1925

The downward trend in the number of live stock using the national forests continued in 1925, when the national forest ranges were grazed by 1,596,846 cattle and horses and by 6,178,104 sheep and goats. The reductions for the year were 125,425 cattle and horses and 152,272 sheep and goats. Individual permittees grazing cattle numbered about 6 per cent less than in 1924; permittees grazing sheep, however, showed an increase of about 2.5 per cent.

The ban against grazing on the Stanislaus National Forest, California, made necessary by an outbreak of foot-and-mouth disease, meant shutting out about 12,800 cattle and 18,000 sheep. The remaining reductions are clearly due to a shortage of stock owned by the permittees. Many non-use permits for the ranges were taken out by permittees intending to purchase more stock and reoccupy their allotments during the grazing season of 1926. The range thus received a welcome rest.

Complete grazing reports for 1926 are expected, from present indications, to show a substantial increase in the number of permittees and in the number of stock.

Temporary withdrawal of public lands from settlement, location, sale, or entry in an area of approximately 236,270 acres in Montana has been authorized in an executive order issued by the President on recommendation of the Secretary of the Interior and the Secretary of Agriculture. The area adjoins the Helena and Missoula National Forests and is being examined by the Department of Agriculture pending legislation looking to placing part of it under national forest administration. The records show that the withdrawn public lands consist of two rather compact bodies of timberlands, largely unsurveyed.

Congress Provides for Forest Roads and Trails

The First Deficiency Act approved by Congress on March 3, 1926, appropriated \$3,775,000 under the provisions of Section 23 of the Federal Highway Act to be used for the construction of forest roads and trails. This was part of the \$7,500,000 which the Agricultural Appropriation Act for the fiscal year 1926 authorized the Secretary of Agriculture to obligate. The remainder, \$3,725,000, was included in the appropriations made by the Agricultural Appropriation Act for the fiscal year 1927, approved May 11, 1926. The appropriation for the fiscal year 1927 also included \$1,275,000 from the \$7,500,000 authorized to be appropriated for the fiscal year 1927. The act further authorized and directed the Secretary of Agriculture to apportion and obligate the entire

\$7,500,000. The apportionments of this \$7,500,000 to the various States as approved by the Secretary of Agriculture are as follows:

Apportionment of \$1,275,000 appropriated and of remaining \$6,225,000 authorized for apportionment and obligation by Agricultural Appropriation Act for fiscal year 1927.

: \$1,275,000 Appropriated: \$6,225,000 Authorized for Obligation				
State	: Forest Highway	: Forest Development	: Forest Highway	: Forest Development
Alabama	550	1,361	3,336	5,045
Alaska	67,128	4,039	406,716	14,970
Arizona	39,447	19,255	238,999	71,360
Arkansas	4,793	10,195	29,043	37,780
California	96,506	86,735	584,716	321,429
Colorado	47,596	35,389	288,376	131,145
Florida	1,714	4,645	10,384	17,216
Georgia	1,567	4,274	9,496	15,838
Idaho	72,340	134,252	438,297	497,524
Illinois	55	40	336	150
Kentucky	228	687	1,382	2,545
Maine	179	123	1,083	455
Maryland	50	—	302	0
Michigan	339	2,371	2,053	8,787
Minnesota	4,162	13,934	25,214	51,639
Montana	57,216	61,507	346,656	227,936
Nebraska	662	279	4,013	1,033
Nevada	13,733	1,111	83,206	4,118
New Hampshire	2,283	2,881	13,832	10,676
New Jersey	119	81	718	299
New Mexico	29,897	28,694	181,138	106,336
New York	100	97	606	359
North Carolina	1,953	6,241	11,832	23,125
Oklahoma	299	73	1,814	273
Oregon	82,250	109,753	498,341	406,733
Pennsylvania	487	1,813	2,950	6,719
Porto Rico	85	62	514	228
South Carolina	268	1,060	1,627	3,930
South Dakota	5,007	4,097	30,336	15,179
Tennessee	1,410	3,935	8,541	14,584
Utah	24,442	14,255	148,088	52,824
Virginia	2,280	5,343	13,813	19,801
Washington	46,290	53,213	280,465	197,202
West Virginia	697	3,815	4,226	14,139
Wyoming	31,368	21,890	190,051	81,123
Total	\$637,500	\$637,500	\$3,862,500	\$2,362,500

On the Value of Being Investigated
By Will C. Barnes, U. S. Forest Service

During its first eight or nine years of life the Forest Service was continually under fire, not only throughout the West but also in Congress. Annually, while Congress was discussing appropriations, the members of the service shivered at the fate which seemingly was in store for the organization. They saw it carved up and dismembered, the various parts scattered all over the far western landscape. A number of well-known western Senators who have long since passed on filled many pages of the Congressional Record with fulminations against Forest Service activities. Demand was made regularly for the complete extermination of the service. The result was that its members were always on their toes and brimful of aggressiveness and energy coupled with a tremendous enthusiasm for the work.

By the time the World War broke out the attacks made upon the service had dwindled until they amounted to very little; and for awhile after that so many other matters, of national and international importance, were before the public that the Forest Service was scarcely noticed. The period of quiet covered more than 10 years, from about 1914 to 1924. During this time, owing to freedom from attack, there was undoubtedly a let-down from the pep and enthusiasm of the early days of trial and struggle.

The Forest Service has ever had the Irishman's love for a scrap and has thrived and done its best work under fire, when forced to fight its way day by day, month by month, and year by year. The investigations, therefore, into the activities of the service by the subcommittee of the Senate Committee on Public Lands and Surveys which began its work early in 1925, were very probably blessings in disguise, a counterirritant, a necessary stirring up of the personnel of the service that has already been of much benefit and will prove a splendid stimulus for every man and woman in it.

Reading over the 4,444 pages of testimony and statistics contained in the printed volumes of the subcommittee, one views a fine cross-section of public opinion as to the value and character of the grazing work of the Forest Service. No wide-awake, ambitious, public-spirited officer can read over these printed reports without being benefited in the process, although he may here and there suffer a few abrasions, get some bad bumps, and lose a little skin, and sometimes have his personal esteem more or less rudely dealt with. Some of those stockmen were certainly frank, to say the least.

Almost to a man the stockmen took the position that the forests were created quite as much for grazing use as for forestry practices, and that the stock grower had a positive right to the forage on the forests. I think they learned that this is not the case.

Many complaints, of course, were discussed at the hearings, some of them justified and some not. In certain of the instances brought up forest officers had made mistakes; but it was usually clear that their errors had been due to overenthusiasm for their work rather than any intention to injure the stockmen involved or in any way to restrict them in a reasonably fair use of the grazing resources of the national forests. In the majority of cases grazing permittees testifying in these hearings gave the Forest Service credit for sincerity and "well meaning" in its plans of range management. They felt, however, that the service was theoretical rather than practical. Whereas the members of the service have always had an idea that they are very, very practical.

There was comparatively little of the sweeping criticism so often made in the early days, that service officers were "tenderfeet," knew not the language of the range men or the West, and were attempting to put over useless grazing methods and systems about which they knew nothing, causing the stockmen embarrassment and often actual losses in carrying them out. Here and there in the hearings some person who had for perfectly logical reasons been unable to secure a permit voiced the belief that he had been the victim of prejudice. Considering that the national forests can take care of not more than one-third of the sheep and cattle in the 11 western range States - which means that applications can be approved for only one out of every three or four of the stockmen in those States - the number of such charges was surprisingly small.

A review of the hearings shows that the majority of the individual complaints against the administration of the national forest ranges were based mainly on two points: first, refusal to grant the individual a permit; and second, reductions on permits, which have been and are still being made because of injury to the range or else in order to accumulate slack with which to take care of applications from new Class A settlers (small near-by homesteaders). If each of these complaints could have been met with a statement from some forest officer acquainted with the facts there is no doubt that substantially all of the decisions would have been shown to be justified by the existing conditions and not to have resulted from any personal feeling on the part of forest officers or lack of appreciation of the needs of the applicant.

It was decidedly pleasant to learn that there was a sincere belief among the majority of the stockmen appearing before the committee that if the public domain was to be placed under administration by the Government the Forest Service with its years of experience in such matters was the organization best qualified to handle it. Also there was a fairly general feeling on the part of a majority of those who appeared before the committee that Federal rather than State control would be the most satisfactory method of administering the public domain.

The question as to whether grazing fees should be increased naturally brought protests against an increase. One can easily understand the attitude of the stockmen toward this burning question. A review of the testimony along this line, however, shows that a large number of the persons questioned by the committee agreed, while opposing any increase in the grazing fees, that their permits are a valuable adjunct to their business operations and that they could not obtain the same amount of feed at the same price anywhere else in the range regions - although many seemed to feel that Forest Service restrictions cut down the value somewhat.

The service has unquestionably been the gainer by this investigation in more ways than one. It is today in a position where it can put the lessons learned into practical everyday use and give the stockmen the benefit of the contacts formed at the hearings.

Broadly, the stockmen demanded three things: (1) a 10-year permit; (2) establishment of boards of appeal; and (3) a legal recognition of grazing as one of the purposes of the national forests. The first two they now have under Forest Service regulations; the third is incorporated in the bill reported by the committee.

A large majority of the persons appearing before the committee contended that the system of handling appeals from decisions by subordinate forest officers was unfair and un-American in that the supervisor's action was reviewed on appeal by the district forester, that officer's decision was reviewed by the Forester, and final appeal was to the Secretary of Agriculture. They demanded the creation by law of local or State boards of appeal composed of stockmen. The statement was made several times that forest officers never reverse themselves, and that no matter how biased or prejudiced the original decision may be it is never reversed on an appeal.

An examination of the Forest Service files shows that decisions by forest supervisors or district foresters have frequently been reversed in toto, although it is true that they have been more frequently sustained. Reversals usually indicate either inexperience or inefficiency on the part of the officers reversed. An official whose decisions require frequent reversal is one who is promptly eliminated from the service. Under a just administration a low percentage of reversals should indicate fairness and efficiency. This is exactly what the service strives for - so far as possible to make reversals unnecessary through the justice and soundness of the original decisions of its field officers.

However, since the complaint - no matter how groundless - has been made, and in order to meet the desire of the stockmen for local boards, the Forester did not wait for the passage by Congress of a special law but took promptly the necessary steps to provide for the creation of boards of appeal composed of practical stockmen permittees, with only one forest officer in the membership of each board. Selection of the stockmen members of these boards is left absolutely in the hands of the permittees. It is interesting to note that although this regulation was promulgated early in 1926, so far as the Washington office of the Forest Service is informed such a board has been organized on only one of the 160 national forests.

As for the 10-year permits, they had been fully considered and decided upon and were being put into effect six months before the hearings began. Except on half a dozen forests where conditions do not justify it, every permittee who desired a 10-year permit now has one. Nearly 50 per cent of the 1926 permits are for 10 years.

The original grazing bill drawn up by the Senate committee and approved by all the livestock associations, but not favored by Secretary Jardine or the Forester, was withdrawn by the committee after the hearings were about over and a new bill substituted for it. This substitute was reported favorably to the Senate by the committee and was several times called up on the calendar but passed over on the objection of some Senator. The substitute bill is satisfactory to Secretary Jardine and the Forester, and while it has some of the family characteristics and traits of the original measure it could hardly call it "Poppa."

- - - - -

Game Census on Eastern-Southern National Forests

Federal game refuges and preserves in the national forests of the East and South number an even dozen, and have a combined area of 279,859 acres. Seven State game refuges with an aggregate area of 148,688 acres bring to a total of 428,547 acres the land within the national forests of this district on which intensive game management has been initiated. Forest officers' estimates for the year 1925 as to the numbers of big game present on these forests show 12,253 deer, 541 bear, 345 elk, 183 buffalo, and 16 antelope. Predatory animals were estimated at 167 coyotes and wolves, 7,715 foxes, and 5,159 wildcats; and the fur-bearing animals at 7,870 raccoons, 7,400 skunk and civet, 4,000 ermine, 2,150 opossum, 1,775 mink, 200 marten, 50 beaver, 40 otter, and 30 fisher.

The number of hunters reported on eight forests of the district was 13,275. (It is likely that the actual number was more than twice this.) Information as to the number of fishermen is available for only one forest, but the reports on seven forests show a million fish planted during the year.

Attendance at Short Courses at Forest Products Laboratory

Thirteen men, chiefly representatives of furniture, musical instrument, and millwork manufacturers, attended the short course in the gluing of wood held at the U. S. Forest Products Laboratory, at Madison, Wis., during the week of June 7. Lectures on the details of gluing operation were supplemented by actual gluing demonstrations and by individual consultations on the particular gluing difficulties of the various members of the class.

Representatives of machinery and hardware manufacturers predominated in the twenty-seventh short course in boxing and crating given at the laboratory May 10-15. Other members of the class of 19 men represented the box, electrical equipment, furniture, confectionery, glass, rubber, and oil trades. One was the eighteenth representative his firm has sent to take the course.

The forty-third short course in the kiln drying of lumber, given to a class of 10 men June 14-25, had as a new feature the operations of a model ventilated dry kiln in the classroom. This was an addition to the regular demonstration run made in the laboratory's forced circulation kiln.

In the civil-service examination for junior range examiner given this spring more men were entered and more were passed than ever before. Of the 20 men who passed, 6 have been appointed as junior range examiners and 7 as rangers; 4 were already under appointment - a supervisor, a junior forester, and 2 rangers; and 3 remain on the register. Of those not yet appointed one has been a ranger in the Philippine Forest Service.

Of the 72 men who passed the examination for junior forester 43 have been appointed, either as junior foresters or as rangers.

The North Carolina Bankers' Association at its annual convention in May approved this clause for insertion in mortgages and deeds of trust:

"The mortgagor or grantor does hereby bind himself as far as feasible to put his waste or idle lands not suitable for agriculture in trees; to protect all forests or forest trees and tree seedlings growing on any of the above described lands, and he further pledges that fires or other destructive agencies shall be prevented and controlled by every practical means at his disposal."

Increased Use of Short Lengths Possible in Factories

Factories might profitably use three times as much short-length softwood yard lumber as they are using at the present time, a recent survey by the Forest Products Laboratory indicates. Such an increase in the utilization of the shorts, or lengths under 8 feet, which are inevitably produced at the sawmills, would lessen considerably the drain on the timber supply. Cutting to size would increase the value of the shorts both to the manufacturer and to the consumer.

The best outlets for shorts are usually offered by industries in which the following conditions prevail: (1) Production is on a quantity basis or the products remain standard from year to year; (2) a large volume of material in relatively few sizes is used; (3) shorts are purchased in carload lots and in specified lengths bundled to facilitate handling.

In order to market shorts successfully the lumber manufacturer must be able to supply reasonably prompt shipments of uniform quality material and must be willing to cut to exact lengths and to bundle his shorts for shipment.

- - - - -

The Fremont field laboratory of the Rocky Mountain Forest Experiment Station, a forest tract of 160 acres on the side of Pikes Peak, is to be handled as a model forest. While making the entire area a demonstration of how forest land in this region should be managed and what it can be made to produce, the Forest Service will continue to use this tract for experiments in methods of cutting and planting and for study of the influence of climate and soil conditions on timber growth.

- - - - -

One of the largest mill scale studies undertaken by the Forest Service in recent years is being carried on this summer by the Forest Products Laboratory, the Southern Forest Experiment Station, and District 7 of the Forest Service. These organizations have combined to study the cost of sawing large and small logs and to develop a mill-scale study of the mills in central Arkansas.

- - - - -

A distinct relation between static and relative humidity is shown by recent observations at the Wind River Branch of the Pacific Northwest Forest Experiment Station. Measurement of static intensity and direction has made it possible to forecast periods of low humidity and consequent high fire hazard by several hours. It has also given warning of the approach of thunderstorms from 1 to 24 hours in advance of any visual indications.

- - - - -

Effect of Careless Lumbering of Spruce in the Northeast

Some lumbermen in the Northeast are cutting two forests at once and utilizing only one, says the Northeastern Forest Experiment Station. These timber operators are supposedly confining their cutting to the mature spruce forests, but at the same time, through careless logging, they are bringing down the young growth from which the future spruce forest would have developed. The forest experiment station estimates that the renewal of spruce in northeastern woods is delayed 20 to 30 years by this destruction of the young growth, and often longer than that because the delay gives a permanent lead to the hardwoods over the evergreens where there is competition between them.

As a result of observations on several spruce forests, where conifers and hardwoods grew in about equal proportions, two interesting facts bearing upon forest conservation have been established: First, in the ordinary process of lumbering without thought for the next crop of timber approximately 25 per cent of all little trees between 2 and 5 feet in height are destroyed; second, as a consequence of this destruction, hardwoods are predominating in the next timber generation, and the valuable spruce tends more and more to be crowded out.

- - - - -

Heavy Logging Helps Yellow Poplar

Foresters of the Appalachian Forest Experiment Station, observing the habits of local hardwoods, have been highly interested by the preference which yellow poplar shows for heavily logged coves and bottoms over those lightly logged. In the older cuttings in the Southern Appalachians, where only the cream of the timber was taken out, yellow poplar seedlings have come in but sparsely if at all. In recent cuttings, however, where the logger has made a clean sweep of the timber and torn up the forest soil fairly well into the bargain, yellow poplar is coming in thriftily.

The explanation lies in the fact that yellow poplar seed germinates but slowly, and will not germinate in the leaf litter of the forest floor but holds over until decay of the litter, frost-heaving of the soil, or the action of water brings it into contact with the mineral soil.

Several hundred seedlings have been carefully dug to find the seed coat. Invariably when this was found it lay $\frac{1}{2}$ to 1 inch down in the soil, with the outer husk practically rotted away, giving evidence that the seeds were more than 1 year old.

- - - - -

Forest fires in the Lake States during the 10-year period 1915-1924 burned over 7,000,000 acres and caused \$33,000,000 damage, according to studies by the Lake States Forest Experiment Station. "Camper-smoker" fires in the second half of that period increased 1,000 per cent. In 1924, campers and smokers caused 34 per cent of the 3,307 forest fires in the three States. Brush burners and railroads, the two other principal causes, were responsible for 23 per cent and 17 per cent respectively.

GENERAL FOREST NEWS

World Forestry Congress

By W. N. Sparhawk, U. S. Forest Service

In the presence of Benito Mussolini, Head of the State and honorary president of the congress, and His Majesty Vittorio Emanuele III, the World Forestry Congress opened at Rome on the morning of April 29. Some 800 delegates from 60 countries were enrolled, although not all attended the meetings. The United States showed up well with about 30 representatives present.

After the opening session, which was devoted to formal speeches and to ratifying the selection of officers, the meeting divided into five sections. Approximately 250 papers, in five languages with French predominating, were submitted, though many were not read and others could not be discussed in the short time available. These papers dealt with many phases of forestry, including forest resources, forest statistics, forest policy, taxation, forest insurance, reforestation, silviculture, research, forestry education, timber trade, naval stores and other industries, forest aesthetics, regulation of torrents, fire protection, forest insects and diseases, tropical forests, and forest grazing. It is, of course, impossible even to attempt a summary of such a mass of material. All the reports will probably be published in the proceedings of the congress. Nevertheless, the resolutions adopted by the various sections and finally by the congress as a whole give a good idea of the general trend of many of the papers and the discussions.

From the forestry point of view, the central theme was the need for increasing forest production. It was pointed out that forest management so far has laid most emphasis on regulation and restriction of utilization, but that the world's timber needs cannot be met in the long run without growing more timber than is being grown now. Several resolutions urged greater activity of public agencies in increasing the production not only of public, but also of private forests. While the States were urged to acquire forest lands, it was recognized that much of the productive area will always be in private ownership. Owners should be compelled, if need be, to refrain from abuse of their lands; but the public should gain its ends so far as possible through cooperation with the owners, giving them technical and financial assistance and concessions of various sorts in return for any restriction put upon them.

The comparatively low productivity of small private holdings (woodlots, etc.), which make up large aggregate areas, was mentioned as a serious problem in many countries, and it was recommended that associations of small owners for purposes of forest management and protection be encouraged and even subsidized, as in Denmark and elsewhere. It was also suggested that further splitting up of small holdings be discouraged. Considerable attention was given to the need for increasing the productive area through afforestation of idle land, not only for protection of soils and streamflow but also for timber production. Several papers dwelt upon the harmful effects on forest production of excessive or unregulated grazing of forest and mountain lands, and resolutions recommended that grazing on all such lands, even though not timbered, be handled under a working plan and by foresters.

The forest experiment stations of the world were asked to include in their programs studies of range improvement and forage production. It was also recommended that the experiment stations of all countries study forest genetics and collaborate in making available authentic seed of selected, proven varieties. They were also asked to study the influence of climate and weather on the occurrence of forest insect epidemics. International collaboration in research on the methods of tapping various resinous species was urged.

The section on tropical forestry passed resolutions urging greater use of tropical woods; control of shifting cultivation, of grazing, and of burning in tropical forests; and extensive research in all tropical countries. The congress also voted to ask the International Institute of Agriculture to call another forestry congress in 1929 or 1930 in some tropical country.

An especially pleasant feature of the meeting was the excursion to Florence, where the State forest school and experiment station were visited, and to the famous State Forest of Vallombrosa, where an opportunity was given to see part of the forest and the arboretum.

One of the principal reasons for calling the congress was the desire of the International Institute of Agriculture and the Italian Government to get the support of the forest administrations of the world in the development of the institute's forestry activities. This was apparently accomplished, for the meeting adopted a resolution declaring the institute to be the best-qualified body for studying forestry questions involving official relations with different governments. The institute was specifically asked to prepare summaries of existing legislation on public intervention in private forestry and of forest taxation policies; to study shelter belts, forest fire prevention and control measures, and legislative and technical problems connected with fish and game; to maintain

currently a survey and information service dealing with forest diseases and insects; and to publish a series of bulletins describing forms of management adapted to different types of forest in various parts of the world.

The American delegation was especially interested in the proposal to establish at the institute a bureau of forestry statistics. After careful deliberation by a special committee representing the countries most interested, a statement was presented and adopted by the congress favoring such a bureau and emphasizing the importance of putting the work in the hands of qualified experts who should so far as practicable be independent of the institute. It is proposed that the bureau encourage the individual countries to get reasonably adequate and comparable statistics on forest resources, production, consumption, and trade, the data to be compiled and published by the institute. The bureau is to be established as soon as the requisite funds can be raised. The Italian Government has made an appropriation of 100,000 lira for this purpose.

Survey of Research Problems in Forestry

An intensive study of research problems in forestry is being organized by a committee of three under the auspices of the National Academy of Sciences and with the financial support of the General Education Board. Prof. L. R. Jones of the University of Wisconsin heads the committee, whose other members are Dr. John C. Merriam, president of the Carnegie Institution of Washington, and Dean Henry S. Graves of the Yale Forest School. The purpose of the study is to determine what are the important lines of basic research necessary to lay a sound foundation for forestry; to ascertain what is now being done along these lines in this country and abroad; and to formulate a plan for a greatly enlarged program of research. Dean Graves will spend the summer at various European forest schools and experiment stations making a study of the educational aspects of the problems of research in forestry, with special reference to the requirements for training men to conduct research in this field.

The actual survey of the problems of forestry research which the committee is preparing to direct will be made by Prof. I. W. Bailey of the department of botany of Harvard University and Dr. H. A. Spoehr, head of the laboratory of the Carnegie Institution at Carmel, Calif.

Damage to wood products by insects in the United States causes an annual loss of at least \$45,000,000, according to the Bureau of Entomology. Much of this loss, the bureau states, can easily be prevented.

Forestry Demonstration on Railroad Lands

When the railroad from Charleston, S. C., to Augusta, Ga., was built, more than 90 years ago, forest lands along the line were acquired as a source of fuel supply for the wood-burning locomotives then in use. This line is now part of the Southern Railway system and, although sales have been made from time to time, about 18,000 acres of these lands are still owned by the railroad. These lands have at present little value for farming, but they are ideal for growing pine trees. The various tracts have been cut over from time to time but most of them support a fine stand of second-growth pine, a scattering stand of mature pine trees, and some mixed hardwoods. The mature pine is loblolly and longleaf, with a few scattered slash trees. The second growth is almost entirely longleaf, the young trees of this species having withstood the frequent burning over of the woods better than the loblolly and slash. These lands were not in demand for agricultural uses and after careful study, with the advice of the U. S. Forest Service, it was decided that they could be put to no better use than that of demonstrating that the large areas of similar lands in the Coastal Plain region can be made to yield substantial profits if managed as perpetual forests for the production of lumber and naval stores.

The largest tract of these lands, near Pregnall, S. C., contains about 10,000 acres. A cruise of this tract showed enough mature loblolly to make immediate operations possible and in June, 1925, a small sawmill was installed by a contractor working under the supervision of the company's forester. This tract has been designated as a demonstration forest. While on most of it there is a very good stand of second-growth longleaf, some areas are in need of planting and are to be planted to slash pine. No longleaf is being cut on the demonstration forest, where a contract has been made for a conservative turpentine operation. No slash pine will be cut on any tract, since it is desired to increase the stand of slash as rapidly as possible.

A tractor-driven mill has recently been bought and is working on one of the smaller tracts, from which it will move to the others in rotation.

Plots of longleaf pine in the demonstration forest have been turned over to H. H. Tryon, extension forester in South Carolina, who has begun thinning experiments and the accumulation of growth data. Similar experiments are to be carried out in the slash pine plantings, and careful tests are to be made of the effects of different systems of turpentine^{on}ing on the yield of naval stores and tree growth.

Before beginning active work in the development of its demonstration forest the Southern Railway Co. made a 6-month investigation involving substantial expenditure. The sawmill operation in its first year has absorbed the preliminary expenses and yielded a satisfactory profit, to which

will soon be added the returns from the turpentine operation.

From article by J. C. Williams, Manager, Southern Railway Development Service, in the Southern Lumberman.

- - - - -

Land Bank Cruises to be Based on International Rule

A set of two cruiser's sticks consisting of a log scale and a tree volume table for southern pine based on the international $\frac{1}{4}$ -inch log rule has been adopted by the Federal Land Bank of Columbia, S. C. The tree volumes are in logs, standardized to a 5-inch top diameter. Separate scales are shown for shortleaf, longleaf, slash, and loblolly pine. A tree scale stick 25 inches in length serves as a check for holding the stick at a distance of 25 inches from the eye. The tables were recently worked up by the research branch of the U. S. Forest Service, and were adopted by the land bank at the instance of W. R. Mattoon, extension forester of the service. At their annual meeting the last of July the directors of the bank will determine how many sets shall be ordered to meet the needs of the approximately 280 associations within the States making up the bank's district - North Carolina, South Carolina, Georgia, and Florida. The officers of the bank are keenly interested in the growing and utilization of timber as a means of supplementing the farm income.

- - - - -

"Report Forest Fires Here" signs are being placed on roadside homes, stores, and filling stations in the Pacific Northwest by organizations belonging to the Western Forestry and Conservation Association. Such a sign tells the rural mail carrier or other passer-by that someone within will telephone to the local fire warden a report of any forest fire he has seen along the way. The signs are diamond shaped, of red and white porcelain enamel. The association uses this design for all its roadside signs, so that no matter what special wording one of them may carry its familiar color and shape remind the traveler to be careful with matches, cigarettes, and campfires.

- - - - -

Prize-Winning Devices in Waste-Prevention Contest

First and second prizes in the waste-prevention contest of 1925-26 conducted by the National Lumber Manufacturers' Association were awarded to E. H. Percy, Ft. Bragg, Calif., and W. H. Ferguson, Marshfield, Oreg.

Electric dogs and taper attachments for the sawmill carriage won the first prize. Tong dogs are substituted for the usual boss dogs and hold the log or cant at top and bottom, so that when a finished surface is against the knee the dogs do not dig into it. This eliminates the waste caused by dog marks on the sawed face of the backboard. The electric dogs also save waste by holding springy cants more tightly against the knee and preventing the mismanufacture of lumber. The taper device makes it possible to saw always parallel to the bark, and is quick and positive in its action. The use of these devices makes a saving in operating cost by doing away with the need of doggers on the carriage and by making possible faster feeding of the saw. It also introduces an additional factor of safety in carriage operation. A minimum of comparatively cheap power is required.

Mr. Ferguson's device furnishes a graphic record of the number and character of carriage movements; the time required for sawing, loading, cant turning, and unloading; and the length of logs sawed. Its object is to furnish the information needed in order to eliminate inefficiency at the head saw. It brings out particularly any delays that occur in the operation.

Both of the prize-winning devices are patented.

- - - - -

Cattle Browse Southern Pines

Injury by cattle to longleaf and loblolly saplings has not been generally reported. A small band of Herefords grazing in a large pasture near Aiken, S. C., have done severe injury by browsing off the tips from longleaf and loblolly pines during the dry seasons of 1925 and 1926. Thousands of little trees from 2 to 4 feet in height were browsed off in May and June, 1926. The buds were the second set of the season, which formed during dry weather and resulting short pasture. The damage of 1925 is on the first set of terminal buds, and apparently occurred during the early spring. Both longleaf and loblolly show excessive bushing from the damage of 1925 and are on the way to further deformity next year. The land and stock belong to the Woolsey brothers of Aiken. The injury by grazing was observed in June, 1926, by Extension Foresters H. H. Tryon of South Carolina and W. R. Mattoon of the U. S. Forest Service.

- - - - -

FOREIGN NOTES

A Swiss Page from a Rome Delegate's Notebook
By W. N. Sparhawk, U. S. Forest Service

The Federal Government of Switzerland does not own any forest, but exercises a large degree of control over all the forests of the country. The Cantons (States) own only 5 per cent of the forest land, while 67 per cent belongs to cities, towns, villages, and other public bodies. It is considered that the popular regard for the forests is due to this localization of public ownership; almost everyone has a direct personal interest in seeing that the forests are maintained. Some of the town councils are so conservative that they insist on keeping trees which the State foresters wish to mark for cutting. Forestry and agriculture are very closely tied together; much of the land that is now farmed would have to be abandoned if it were not for the wood and the work afforded by the forest, while the forests would not pay so well as they do if it were not for the large local wood-using population. In many rural districts of Switzerland the per capita consumption of wood is apparently as large as in similar regions of the United States.

The large amount of capital represented by a going forest is particularly striking. One village is buying farm land at \$75 an acre to plant trees. The average stand on its existing forest is about 5,600 cubic feet per acre (about 30 M board feet). Another communal forest near by has an average stand of over 40 M feet and cuts 126 cubic feet per acre per annum (considerably less than the annual increment). During the last 10 years this forest has paid an annual net return of \$19.50 an acre, the highest in Switzerland.

The cut on most of the Swiss forests is regulated by the "control" method instead of by formula. The entire stand (all trees over 6 inches DBH) is calipered at 10-year intervals, and the cut is based on the increment thus determined. It is interesting to note that the Swiss apparently do not believe in compound interest in forestry. All charges for planting, roads and other improvements, taxes, and other costs are written off currently against the revenues.

- - - - -

Mexico's New Forest Law

Acting under authority granted by the Federal Congress of Mexico, President Calles has promulgated a forest law which becomes effective on June 24. It provides that all unappropriated forest land and all forest land acquired by the Federal Government or the States under Article 27 of the Constitution shall be declared a forest reserve, and shall not be subject to alienation. The Executive, through the Department of Agriculture, may permit exploitation under working plans that will insure continuous forest production.

The exploitation of communal or common forest lands, which include all such lands that are incapable of agricultural utilization, is subject to regulation by the department, and commercial exploitation may be carried on only by cooperative organizations of the local citizens.

No private forest land may be deforested or exploited without a permit from the Department of Agriculture, which shall require the reestablishment of forest vegetation destroyed, by natural or artificial means. The Federal Government or the individual States can expropriate land for purposes of establishing timber reserves by reforestation, and can take over land on which reforestation is deemed necessary for fixation of sand dunes, control of torrents, etc., in case the owners refuse to do the work. The Department of Agriculture is to establish forest nurseries itself or in cooperation with local authorities.

After one year from the date of the law, no railroad ties, posts, poles, or mine props may be used without having been treated with some preservative. It is also required that all commercial timber be sawed, not hewn. Any industry using wood must use it completely, including by-products and waste.

All citizens are required to cooperate in combatting insect and other pests and in fighting forest fires. Use of fire in or near forest land is forbidden, except with proper precautions to prevent its spread. Owners must take such measures as may be necessary to prevent or extinguish fires on their own land and must assist in fighting fire on neighboring land.

The forest service in the Department of Agriculture is to administer the law and also carry on scientific investigation in forestry. The college of forestry for training technical officers is under control of the department, and the Federal Government is to cooperate with local governments in establishing secondary schools for training the subordinate personnel.

Forest industries are to be taxed according to the quantity and value of output. Owners managing their forests according to an approved working plan are to pay no tax on the forest cover until it is cut, can call upon the forest service for technical help in making the working plan and for assistance in reforestation, and in case of artificial reforestation are exempted from Federal taxes on the land itself.

New Fire Protection Organization in Nova Scotia

Until this season, forest protective work in Nova Scotia was carried on separately by the different municipalities. To raise the necessary funds for employing rangers each municipality levied on forest land a "fire tax" of one-half cent an acre. Under an act passed at the last session of the legislature, the Province has this season organized a unified forest protective service. Otto Schierbeck has been made chief forester. The Province is to have a permanent force of 10 chief rangers and a seasonal force of 62 subrangers.

It is planned to make fire prevention the chief activity of the new service. Rangers will supervise slash burning, patrol railways, and enforce fire regulations applying to lumber and sawmill operators, campers, and hunters. They will supervise cutting and combat insect pests, and on Crown lands will guard, survey, and estimate timber and act as game wardens. A system of lookouts will be established throughout the Province, and fire-fighting apparatus will be distributed at strategic points.

The fire tax, now payable to the Provincial Treasury, has been increased to three-fourths of a cent. All timberlands in areas of 200 acres or more are liable to the tax, which is expected to provide \$60,000 annually.

Three cash prizes of \$500, \$350, and \$150 respectively have been offered by Frank J. D. Barnjum of Nova Scotia to the chief rangers, to be awarded on the basis of this season's work. The awards will be determined by the number and size of fires in each ranger's district and by his organization of patrol, technical reports, and general conduct of work. The chief forester will act as judge, and will announce his decisions on November 1. Mr. Barnjum in announcing his offer to the rangers wrote "Nova Scotia can, on account of its moist climate and easy access to all its timber, be made absolutely fireproof...It is my hope that the first prize will be awarded to a chief ranger who can show a clean slate in regard to forest fires in his district."

Canadian Tree-Planting Lecture Car

To stimulate the improvement of prairie farms with windbreaks, shelter belts, and ornamental tree plantings, the Canadian Forestry Association sends out through the western Provinces of the Dominion a "tree-planting lecture car." The car is equipped with motion-picture apparatus and films, and seats an audience of 125. This spring it toured the prairie Provinces from February 1 to May 4, when it was temporarily withdrawn for service in a special fire-prevention campaign in British Columbia. Within that time its staff gave 190 lectures, in more than 90 communities, with a total attendance of about 20,000.

The Canadian Forestry Association has planned this season to have eight or ten field lecture parties at work, on itineraries leading through small and remote communities and reaching from coast to coast. Each party carries motion-picture equipment and distributes printed matter. If this campaign is as popular as that of last year, it will reach more than 2,000 people a day.

- - - - -

Forest fire losses in Canada during 1925 were heavier than in the previous year but were less than the average for the five-year period 1920-1924. In all 5,490 forest fires were recorded, burning over an area of 1,913,066 acres and causing a total loss of \$6,646,889.

In Quebec, owing in part to the good patrol service now established and also to the favorable weather conditions, only about 25,000 acres were reported burned over during the year. This was about 10 per cent of the area burned over in 1924 and less than 1 per cent of the 1923 figure.

- - - - -

Recent pulpwood concessions on Crown lands in the northern part of Ontario have carried with them the requirement that the wood be turned into paper before it is exported. Formerly it was required only that the wood be converted into wood pulp before being exported.

The Legislature of Nova Scotia has decided to impose a tax, effective May 1, 1927, on all pulpwood cut in the Province. The tax will be remitted in the case of wood manufactured within the Province.

- - - - -

Three thousand acres of forest land at Waverley, Halifax County, Nova Scotia has been set aside by the Provincial Government for reforestation. The work is to be carried out by the Boy Scouts, under Government supervision. When the timber is sold, 40 per cent of the profits will go to the Scouts.

- - - - -

British Columbia and Nova Scotia Forest Products Output

The total cut of timber in British Columbia for 1925 is reported by the forest branch of the Provincial lands department as 2,861,000,000 feet, of which it is estimated that 78 per cent was sawlog material and 22 per cent minor forest products. The estimated valuation is \$81,941,000, an increase of \$1,239,000 over 1924. The increase is due to increases in pulp and paper and miscellaneous products, which more than offset a reduction in the value of lumber caused by low prices.

Revenues collected from the forest industries amounted to \$3,478,000--a new high record. Three per cent of the revenues from royalty and stumpage is set aside for use in developing and protecting forest reserves.

In Nova Scotia, according to consular reports, about 300,000,000 superficial feet of sawed material was produced in 1925. The production of lath exceeded that in any other year, reaching approximately 200,000,000 pieces.

Change in Climate Kills a Forest

During a field trip in the Sahara in 1925, Inspector Lavauden of the French Forest Service found in the mountains of Tassili des Azdgers in Central Sahara a specimen which he identified as Cupressus sempervirens. On the basis of reports by the explorer Duveyrier and information gathered from the natives, Lavauden estimates that no further back than the 17th Century the southern slopes of these mountains supported an extensive forest. It appears that the determining factor in the disappearance of the forest is the change in climatic conditions, though cutting may have had some influence. Infrequency and insufficiency of rain prevented regular germination of cypress seed and if some seed succeeded in germinating the young plants were killed by the dryness before they could develop good root systems. The inference is drawn that within comparatively recent times the climate of the Sahara has rapidly become drier.

Is it possible that in other cases of horrible examples of deforestation, changes in climate should bear at least part of the blame?

A feature of Save-the-Forest Week in Nova Scotia was a full-page advertisement in the Halifax Herald of April 21, inserted by the Provincial department of lands and forests and supported in the same edition of the paper by display advertisements inserted by lumber and paper companies, insurance companies, and others.

Danish Forest Associations

Danish forest owners with holdings of less than 50 hectares during the last few years have formed what are known as "small holders' forest associations." Each of these associations (of which there are now six) with the assistance of the State Government engages a trained forester to advise and assist it in connection with forest problems. The forester's duties consist in advising and assisting in such matters as cutting, thinning, and planting, and he also usually advises and assists in connection with purchases of trees and in the sorting and sale of lumber. In addition, the associations usually arrange for educational meetings and excursions; but in contrast to the educational forestry work carried on in the United States the guiding principle of the activity of the associations and the foresters is to provide technical service, rather than to educate.

The law of March 1, 1919, under which the State Government assists in the employment by the forest associations of trained foresters, provides for a maximum grant of 2,000 crowns per year toward the employment of a forester by an association of forest owners whose holdings do not exceed 50 hectares.

The fees of the associations are very small. The annual fee averages 2 crowns for holdings under 6 hectares and 4 crowns for holdings of between 6 and 50 hectares. The service of the forester is usually paid for at a rate of about 2 crowns per hectare, of which the State pays half.

In addition to the activities of the "small holders' forest associations" a work of considerable proportions along similar lines is carried on by the so-called plantation association (Hedeselskabet), an association of larger and smaller owners of cultivated pine and fir plantations, which likewise receives State aid.

From report of H. Sorensen, Commercial Attache.

- - - - -

Finland Sets the Export Pace in Europe

In 1925, according to Bois et Resineux, Finland took first place among European countries as an exporter of sawed timber, with a total of 1,040,000 standards, surpassing Sweden with 1,016,000 standards. Great Britain took the greatest quantity of the Finnish product, 446,000 standards, Holland, Belgium, Germany, and France following in order. In 1926 sales for export from Finland amounting to 260,000 standards had been negotiated by the first of February.

Americans Abroad

{Excerpts from an article by Dr. J. S. Boyce, forest pathologist, Bureau of Plant Industry, in the Forest Patrolman.}

Pacific Northwest conifers are growing faster in England and Scotland than at home.

At the conclusion of the World War, Great Britain found it essential to begin extensive reforestation and afforestation. Her woefully inadequate supply of softwoods was almost completely exhausted. Furthermore, there were large areas of practically unproductive land on which, in the highlands of Scotland, the population was steadily decreasing. Timber on such land would give employment and keep the remaining people there.

Unfortunately, there is only one conifer of commercial value native to Great Britain, that is Scotch pine (Pinus silvestris). This species, together with European larch (Larix europaea), introduced so long ago that many believe it to be native, comprised the bulk of the softwoods grown. These two trees grow slowly, however, and fast-growing trees were needed. Furthermore, they were found quite unsuitable for certain extensive areas.

The English are enthusiastic arboriculturists, so that specimen trees from all over the world may be found growing on the big estates. The phenomenal increment of certain Pacific Northwest species among these pointed the way. Douglas fir and Sitka spruce are now extensively planted, the latter particularly on the wet peat soils which cover such an enormous area in Scotland. Lowland white fir (A. grandis), western hemlock, (known here as spruce-hemlock), noble fir, western red cedar, and Port Orford cedar are being used on a much smaller scale. In Scotland I was shown a permanent sample plot for studying the growth rate of lowland white fir.

These species on good sites uniformly seem to be growing more rapidly than they do in the Pacific Northwest. This is probably accounted for by the mild wet winters combined with the normal summer of considerable rainfall. The trees do not have the handicap of the dry summer which they must endure at home, while the winter is just as favorable. Whether this rapid growth will be sustained cannot be foretold.

There is another side to the picture. While the stands over there are not in constant danger from fire, certain fungus and insect pests have been brought in along with the trees and, apparently also finding their new surroundings congenial, are causing more damage than at home. Douglas fir is suffering quite severely in certain localities from the Douglas fir aphid. I visited a small island in the Baltic Sea where western white pine (Pinus strobus), known in England as Weymouth pine, is being completely killed out by white pine blister rust. The white pine was introduced from eastern North America, the blister rust probably

migrated from Asia, and when the two met in Europe the result was disaster to the pine.

But on the whole, the Americans do very well abroad, and several decades hence they will be a very impressive lot of emigrants--a credit to their native home and a valuable asset to their adopted country.

Forestry in Haiti

(An excerpt from an article under this title by Wm. R. Barbour, director of the Haitian Division of Silviculture, in the Yale Forest School News.)

Haiti is a very complex problem. The soil varies from extremely alkaline to slightly acid, of every degree of texture and fertility, derived from limestone for the most part but also from basalt and other igneous rocks. The topography ranges from absolutely flat to extremely rugged, the altitude from sea level to nearly 9,000 feet. Rainfall varies more than any other factor. One side of a mountain range will be arid, the other side extremely wet. The annual precipitation sometimes changes in twenty miles from less than 20 inches to over 100 inches.

In July, 1925, ground was broken for a forest nursery near Port-au-Prince, and the first experimental sowings were made late in September. Very many species, both native and exotic, have been tried on a small scale, and with a few exceptions with good success. Mahogany, Spanish cedar, and logwood among the native species, and wattle, casuarina, eucalyptus, etc., among the exotics, will probably be planted in greatest quantities.

A number of species from the temperate zone have been tried. While in all probability they will not do well unless on the higher mountains, still there are now growing in the nursery and apparently thriving, redwood, bald cypress, Arizona cypress, pinus maritima, etc.

Mahogany has proven especially easy to propagate. Seedlings from seed planted September 17 are now (February 9) over 18 inches high and growing rapidly. No attempt will be made to grow any mahogany other than the indigenous species, Swietenia mahogani, since mahogany from this island has always been considered of first quality, and while the trees are said to grow more slowly than the Honduras and Venezuelan types, the indigenous type will probably prove more adaptable to local conditions. This season enough mahogany seed is being collected to produce some 200,000 seedlings.

Six months ago a start was made toward getting a forestry law passed and now the law has been passed. This law transfers to the jurisdiction of the Service Technique all areas of Government-owned land, which will be grouped into national forests and administered in accordance with the principles of forestry. It will be possible to sell forest products, lease grazing privileges, establish a system of rangers and guards, and eventually to bring the wild regions of the Republic back to a state of productivity.

PERSONALS

Rutledge Parker, former supervisor of the Missoula National Forest, has taken office as State forester of Montana. Mr. Parker is a graduate of the Yale Forest School and has been with the U. S. Forest Service for 10 years.

- - - - -

Roy L. Hogue has been appointed by the recently organized Mississippi Forestry Commission to the office of State forester. Mr. Hogue, who is a graduate of the University of Michigan Forest School, has been active in lumbering and forestry in Mississippi for some years.

- - - - -

William K. Williams, forester of the Crossett Lumber Co. of Crossett, Ark., has been appointed extension forester with the extension service of the Agricultural College of Arkansas. He will begin his new work in the fall, with headquarters at Little Rock.

- - - - -

D. L. Matthews and Dan Crosby of the Tropical Plant Research Foundation have gone on an extensive trip through the tropics, principally to look up substitutes for cork oak and to study the possibility of introducing cork oak into tropical regions.

- - - - -

Dr. Charles C. Adams has resigned as director of the Roosevelt Wild Life Forest Experiment Station of the New York State College of Forestry to become director of the State museum in the New York Education Department at Albany.

- - - - -

State Forester F. B. Merrill of Kentucky has been appointed by the Secretary of Agriculture to membership in the Appalachian Forest Research Council, to fill the vacancy caused by the death of Dr. George W. Lyman.

- - - - -

Dr. Dow V. Baxter, of the University of Minnesota, has been appointed assistant professor of forestry at the University of Michigan.

- - - - -

Dr. Henry Schmitz, director of the Minnesota Forest School, is cooperating with the Lake States Forest Experiment Station this summer in a study of the diseases of the aspen.

- - - - -

George N. Ostrander, President of the Finch-Pruyn Paper Co., is cooperating with the Northeastern Forest Experiment Station in the establishment of a fire-weather station on the company's holdings at Elk Lake, N. Y.

- - - - -

Dr. A. G. Keinholz of the University of Illinois is working this summer with the Pacific Northwest Forest Experiment Station on a study of the ecology of Douglas fir reproduction.

- - - - -

Charles W. Folds has been elected national president of the Izaak Walton League.

- - - - -

L. N. Erickson of the Forest Products Laboratory has been granted a year's furlough to undertake a survey of the lumber requirements of the Western Electric Company of Chicago. The survey will have as its principal aim the determination of the suitability of different grades of lumber for various uses in the manufacture of electrical goods, and may include also a study of the practicability of the purchase of small ready-cut stock to meet the needs of the firm's electrical equipment plant.

- - - - -

At the recent hearings before the House Committee on Agriculture on the bill to establish a forest experiment station in Pennsylvania the following men testified: R. Y. Stuart, Pennsylvania Department of Forests and Waters; H. R. Wheeler, general manager, and A. G. Chaffee, forester, Wheeler and Dusenbury Lumber Co., Pennsylvania; Shirley Allen, American Forestry Association; J. A. Ferguson, Pennsylvania State College; and Willis M. Baker, assistant State forester of New Jersey.

- - - - -

R. M. Hutchinson, recently blister rush control agent of Saratoga, N. Y., has been appointed extension forester for the State of Maine, with headquarters at Orono, Maine.

- - - - -

Assistant Range Examiner William G. Mc Ginnies, who has been in charge of range investigations in the Northern National Forest District, has accepted a position at the University of Arizona, effective December 1, 1926. He will teach range management, but much of his time will be available for conducting range investigations.

- - - - -

Assistant Prof. P. A. Herbert of the forestry staff of the Michigan Agricultural College gave up his teaching work at the close of the college year to accept a permanent appointment in the U. S. Forest Service for work on the tax study.

- - - - -

Officers of the Georgia Forestry Association, elected at the annual meeting of the association April 28 and 29, are as follows: President, M. T. Nichols, Gordon, Ga.; Vice presidents, K. E. Mack, Thomasville, Ga.; Mrs. H. E. Judd, Dalton, Ga.; Prof. T. D. Burleigh, of the Georgia State Agricultural College, Athens, Ga.; and Mrs. Madge Merritt, Brunswick, Ga.; Secretary, Bonnell H. Stone, Blairsville, Ga. (reelected).

- - - - -

Officers elected by the Vermont Forestry Association at its recent annual meeting are as follows: President, K. R. B. Flint, Northfield; vice president, Mortimer R. Proctor, Proctor; treasurer, Raymond H. White, Middlebury; and secretary, Reginald H. Titus, Northfield.

- - - - -

Edmund J. Zavitz has been appointed deputy minister of forests for the Province of Ontario. Mr. Zavitz was at one time a student in the Yale Forest School. He has been a member of the Ontario forestry organization since 1905.

- - - - -

Raymond E. Marsh is leaving his post as chief of forest management in the district office of the U. S. Forest Service at Albuquerque to become assistant chief of the branch of research in the Washington office. Mr. Marsh has been a member of the Federal Forest Service ever since his graduation from the Yale Forest School in 1910, serving the whole of that period in the southwest.

J. A. Beal, consulting entomologist of the Bureau of Entomology, has been transferred from the Northeastern Forest Experiment Station to the Appalachian Forest Experiment Station.

- - - - -

William L. Hall, formerly of the U. S. Forest Service and now consulting forester to the Diercks and other lumber companies of Arkansas, represented the Department of Agriculture at the Sixth National Conference on State Parks, held at Hot Springs June 14-17.

- - - - -

A. F. Amadon, formerly an agent of the Bureau of Plant Industry, has been appointed forester with the New York Conservation Commission. He will alternate with the superintendent and assistant superintendent of forests in charge of the Albany office. Duncan Rankin, also a former employee of the Bureau of Plant Industry, has been appointed forester with the commission and assigned to the selection and acquisition of lands for a game refuge and demonstration forest situated outside of the forest preserve counties. Arthur S. Hopkins has left his position with the commission to accept one with the Long Island State Park Commission.

- - - - -

R. W. Wheaton, of the Absaroka National Forest, has been appointed district fire warden for western North Carolina, with headquarters at Asheville.

- - - - -

Alfred Akerman, an assistant forester of the Virginia Forest Service, is leaving that position to take a similar one on the State forestry staff of Georgia.

- - - - -

Ashbel F. Hough, a junior range examiner in Forest Service District 5, is taking a year's leave of absence in order to accept a research scholarship at Yale.

- - - - -

The Appalachian Forest Experiment Station as a result of its new appropriation has increased its staff by four men: Ashbel F. Hough from the Stanislaus National Forest (for the summer only), L. F. Kellogg from the Shasta National Forest, I. H. Sims from the junior forester register, and Jesse H. Buell of the Snoqualmie National Forest. Prof. L. J. Young of the University of Michigan is working with the station staff on studies of methods of cutting southern Appalachian hardwoods.

BIBLIOGRAPHY

The Story of the Range

A history of the western grazing lands from the days of Coronado to the present time is about to be published by the Forest Service under the title "The Story of the Range." The author is Will C. Barnes, chief of the Forest Service branch of grazing, who for nearly half a century has been in close touch with range conditions throughout the far West. Mr. Barnes discusses the marvelous original forage resources of the western range, how it was stocked, the meeting of the herds of the East with the longhorns of the West, and stock raising past and present. Together with the results of personal experience and observation he presents those of a study of all available historical information on his subject.

The volume contains many illustrations.

Requirements for Timber Growing in the California Pine Region

Timber Growing and Logging Practice in the California Pine Region, by S. B. Show (U. S. Department of Agriculture Bulletin 1402), is the first of a series of reports whose broad purpose is to put before the forest land owners of the United States, and also the general public, (1) the recommendations of the Forest Service as to measures for protecting forest lands from denudation and keeping them reasonably productive, and (2) similar recommendations as to the methods of protection and silviculture which will result in the development of full timber crops. This publication deals with the forest lands of the Sierra region in California, where a difficult reforestation problem arises from the tendency of important pine species to delay production of new stands after the young growth has been destroyed by fire or in the logging process. It discusses, among other things, how many trees should be left to seed logged areas and how large these trees should be, and what the practice of leaving seed trees will cost the landowner.

Bringing Back Longleaf Pine

The Longleaf Pine Primer just published by the Forest Service makes available to farmers and pineland owners in the South the answers to the practical questions of how longleaf pine can be brought back after logging, what returns may be expected, how longleaf pine should be handled to make the best returns in both timber and turpentine, and what steps are necessary to protect the crop from fire and other damage.

A 32-page leaflet describing the Rocky Mountain Forest Experiment Station has just been issued by the Forest Service. It contains a brief statement of the aims of experiment station studies and information in some detail about the buildings and field laboratory, the methods of work, the problems before the staff, and the forest trees of the region. Written in nontechnical style, the leaflet is calculated to interest both the general public and those concerned with the advance of research work in forestry.

- - - - -

Recent Books and Pamphlets

- Chapman, H. H.: Factors determining natural reproduction of longleaf pine on cut-over lands in La Salle Parish, Louisiana. 44 pp. illus. Yale Forest School bulletin no. 16. New Haven, 1926.
- Clapperton, G.: Practical paper-making. 3rd ed. 220 pp. pl. C. Lockwood & Son. London, 1926.
- Ecological Society of America: Naturalist's guide to the Americas. 761 pp. pl. maps. Williams and Wilkins Co. Baltimore, 1926.
- Hummel, C.: Report on the forests of British Honduras, with suggestions for a far-reaching forest policy. 122 pp. map. Crown agents for the colonies. London, 1925.
- Indiana Department of Conservation: Seventh annual report, for the year ending September 30, 1925. 199 pp. tables. Indianapolis, 1926.
- King, N. L.: *Pinus insignis* Doug. (*Pinus radiata* D. Don) in South Africa. 30 pp. illus. (South Africa Forest Department bulletin no. 15.) Pretoria, 1925.
- Koehler, A., and Thelen, R.: The kiln drying of lumber. 293 pp. illus. McGraw-Hill Book Co., Inc. New York, 1926.
- Lorey, K. J. T.: Handbuch der forstwissenschaft, 4th ed. vol. 2. 867 pp. illus. pl. H. Laupp. Tübingen, 1925.
- National Lumber Manufacturers' Association: Progress in industrial reforestation. 8 pp. illus. Washington, D.C., 1926.
- New York Forestry Association: New York Forestry Year Book. Simmons, J. R.: The municipal forest movement, pp. 8-11; Hosmer, Ralph S.: New ways to start new forests, pp. 16-17, 28; A forest taxation bill, pp. 36-38.
- Oregon State Board of Forestry: Fifteenth annual report, for the year ending December 31, 1925. 29 pp. Salem, Oreg., 1926.

Southern Forestry Congress (Eighth, held at Richmond, Va., January 6-7, 1926). Proceedings. 151 pp. College Station, Tex. 1926.

Smythies, E. A.: India's forest wealth. 2nd ed. 137 pp. pl.
(India of today, vol. 6.) Hurnphrey Milford. London, etc., 1925.

U. S. Department of Commerce, Bureau of Standards: Revised simplified practice recommendation no. 16: lumber. 87 pp. Washington, D. C., 1926.

Articles in Periodicals

American Lumberman, May 22, 1926. - The fight on forest pests in the Lake States, by S. A. Graham, pp. 61-62.

Bulletin Société Centrale Forestière de Belgique, May, 1926. - Amélioration des futaies feuillues médiocres, by O. Richir, pp. 244-253.

Economic Geography, April, 1926. - The Landes: reclaimed waste lands of France, by W. O. Blanchard, pp. 249-256.

Forstwissenschaftliches Centralblatt, May 1, 1926. - Einiges über die waldwirtschaft in Siebenbürgen, by Jul. Frohlich, pp. 305-318.

Indian Forester, March, 1926. - Recent progress in Indian forestry, by E. P. Stebbing, pp. 104-117.

Journal of the New York Botanical Garden, March, 1926. - Trees and shrubs in winter, pp. 63-67.

Mechanical Engineering, April, 1926. - Spark arresters and forest fires, by J. S. Mathewson, pp. 352-353.

New York Lumber Trade Journal, April 1, 1926. - How much longer can the North draw on the South for long and short leaf pine, by C. Hill, pp. 21-23.

Paper Industry, April, 1926. - Alaska as a source of newsprint, by F. H. Heintzleman, pp. 53-57.

Paper Trade Journal, April 1, 1926. - Uses of bamboo for pulp and paper making, by J. G. Mayo, pp. 34-38; May 6, 1926, Industrial forestry, by W. B. Greeley, pp. 28-34.

Pulp and Paper Magazine, April 15, 1926. - Fighting forest fires with mechanical equipment, by H. C. Johnson, pp. 445, 447. The present status of the spruce budworm outbreaks in eastern Canada, by J. M. Swaine, pp. 451-454.

Scientific Monthly, May, 1926.- Research in forest taxation, by F. R. Fairchild, pp. 428-433.

Timberman, April, 1926.- Slash disposal; its role in the yellow pine region, by R. H. Westveld, pp. 44-46. May, 1926.- Cutting for a permanent yield, by W. W. Ashe, pp. 194, 196, 198; Forest insect depredations in the United States and Canada, pp. 178, 180, 182, 184.

U. S. Department of Agriculture, Monthly Weather Review, January, 1926.- The correlation between sun-spot number and tree growth, by J. A. Harris, pp. 13-14.

West Coast Lumberman, May 1, 1926.- New yield tables for Douglas fir, by Robert E. McArdle, pp. 100-101, 105; The forests and forest industry of Idaho and Montana, by S. V. Fullaway and R. N. Cunningham, pp. 120-122; A wet-weather brush burner, minus the smoke nuisance, by R. Conway, p. 226.

Wood Working Industry, May, 1926.- The technology of wood finishes and their application, by S. M. Silverstein, pp. 28-34.

World's Work, April, 1926.- The last of the eastern wilderness; an article on the proposed Great Smoky national park, by H. Kephart, pp. 616-632.

- - - - -

Miscellaneous Publications of the Forest Service

Farmers' Bulletin 1492, Arbor Day (reprint)

Miscellaneous O-9, Information Regarding Employment on the National Forests.

Department Circular 359, State Forestry Laws.

Miscellaneous Circular 61, National Forests of Idaho.

Map Folders: Absaroka National Forest; Santiam National Forest; Pisgah National Forest (reprint); Mount Hood Loop Highway Log.

Trespass on National Forests of Forest Service District 1.

Grazing Use Book (revised).

Handbook on Construction and Maintenance of the National Forests' Telephone System.